

## **STEM Summit – March 30<sup>th</sup>, 2015**

### **Quality STEM for Active Learning: Resources and Support for Educators**

10:20 to 11:20 pm

Facilitators: STEM Active Learning Community Partners Working Group

*Through a project with the Noyce Foundation and the National Networks of Statewide Afterschool Networks, the STEM Active Learning Community Partners Working Group is utilizing the Dimensions of Success (DoS) STEM Program Planning Guide to provide a common definition of active learning STEM and improve the quality of STEM educational experiences. Learn more about this tool and how it can support STEM active learning for all youth.*

### **Welcome and Introductions**

Deb Dunkhase, co-chair of the STEM Active Learning Community Partners Working Group and Executive Director of the Iowa Children's Museum, gave a brief background of the committee's development into a working group. The STEM ALCP Working Group of Governor's STEM Advisory Council has been around for four years, since the inception of the Council. Much focus of The Council has been on secondary and college-level education, but our group is dedicated to everything that happens outside of school day. Dunkhase introduced members of the Working Group in attendance. The reach is tremendous through science centers and museums due to the sheer number of attendees. All are invited to join our network! What everyone wants is RESOURCES. But since all programs have different interests and foci, we decided that instead of finding the perfect STEM activity, it would be more useful to figure out what high quality means in STEM.

### **Quality Out-of-School Time STEM Definition**

Renee Harmon invited attendees to brainstorm on post it notes how they would define quality. After five minutes, participants broke into small groups to discuss what they wrote and decide upon any similarities within their definition of quality.

Share-out from group discussions on what defines "quality":

- It has to be active and engaging, especially if it's afterschool. The kids need to be up and moving!
- The kids need to be inspired to come up with more questions of their own, continuing the thinking beyond the activity. Since so many programs are a one-shot experience, if you can leave them with more to try at home, it can keep it rolling.
- Engaging and authentic, connected to something beyond and a learning outcome.
- Feeling of collaboration and creating memories.
- Good structure, timeframe, and planning with multiple entry points for the diverse needs within the group.
- Importance of evaluation for continual improvement and building on the learning.
- Need to think of ourselves as team leaders or facilitators, rather than a presenter, because the "failures" are really learning opportunities. We don't need to be fearful of STEM content, because we are searching for the answers together with the students.
- Peer-to-peer learning and teaching; voice and choice and relationships
- Safe emotional, intellectual, and physical environment
- Facilitator needs to be prepared beyond just the planned activity because if the kids take it a different direction, you don't want to shut them down, but encourage it.
- "Sneaky" learning that doesn't look like school; activities that leave the kids wanting more
- Relationships and the importance of partnerships among the community, parents, and school.
- Promoting a growth mindset and the experience to connect it to the real-world application.

Harmon shared the working definition of the STEM ALCP Working Group:  
"Quality informal STEM integrates science, technology, engineering, and math by providing meaningful opportunities set in a relevant context for youth to develop critical-thinking and problem-solving skills, inquiry, and creativity through engaging, hands-on and inter-generational activities and programming. Quality programming is distinguished by authentic and appropriate active engagement in purposeful activities in an environment that is conducive to learning, curiosity, and experimentation, and provides youth with opportunities to build positive relationships, reflect, and connect their learning to the broader world."

### **The DoS Planning Tool: A Case Study of Slime, Before & After DoS**

Dunkhase introduced an activity that the Children's Museum does, and showed a video of a facilitator conducting the "Slime" activity with a group of children, both before and after using the Dimensions of Success (DoS) Planning Tool. Dunkhase shared that after using the Planning Tool, the learning goal of the Slime activity completely changed from how they had been doing the activity for years.

### **Introduction to Dimensions of Success**

Indira Karic introduced the Dimensions of Success (DoS) tool, which is used to observe STEM activities and determine quality. The DoS Tool was built around the Clover Model for Youth Development by Dr. Gil Noam of Harvard University's Program in Education, Afterschool, and Resiliency (PEAR). The four leaves of this Clover are Assertiveness, Belonging, Reflection, and Active Engagement.

The four broad domains, based upon the Clover Model, are the Elements of the Learning Environment, Activity Engagement, STEM Knowledge & Practices, and Youth Development in STEM. The Dimensions within these domains are Organization, Materials, Space Utilization, Participation, Purposeful Activities, Engagement with STEM, STEM Content Learning, Inquiry, Reflection, Relationships, Relevance, and Youth Voice.

A full version of the PEAR-DoS Program Planning tool may be accessed online at <http://www.pearweb.org/tools/dos>. Dunkhase shared a printed copy of the before-and-after DoS planning tool plan for their Slime activity.

Different ways to get involved:

- 1) Become Certified to be a DoS Program Evaluator
- 2) Ask for a Certified DoS Evaluator to Visit Your Programs
- 3) Learn to use the DoS STEM Program Planning Guide

Cynde Keating shared her experience of being evaluated with the DoS tool and how it has changed her way of teaching in the afterschool setting. A testimonial to the true value of the tool as "not just another evaluation." As a previous school-day educator, it gave her a new way to look at how to facilitate activities. She would like to see a data bank of activities that are "DoS-ed"!

### **DoS Planning Tool PD Workshops to be held in each of the Regional Hubs in 2015**

Deb Frazee announced that the Regional Hub Managers are planning to do professional development workshops in each of the regions this year, in order to continue broadening the network.

